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Farms Are Getting Larger and Fewer

THE revolution in farm production during the past half dozen years has been accompanied by a substantial increase in larger farms. The traditional family-size farm, long the foundation of American agriculture, has been giving way to much larger commercial units. And the typical farm operated largely as a family enterprise is also larger.

Just how much larger farms are is indicated by preliminary 1945 census data released recently. The average farm for the country as a whole is now 50 acres larger than 25 years ago, 20 acres larger than 5 years ago. But these averages combine the small residential farm of the East with the large ranch of the West. In the Midwest where these extreme sizes are less numerous, the average farm has increased about 30 acres in 25 years. In Oklahoma, a State settled almost entirely according to the original 160-acre homestead unit, the average farm has increased from 166 acres in 1920 to 220 acres in 1945.

Today, over half of the farm land in the country is in farms of over 500 acres, compared to only a third in 1920. And farms over 1,000 acres now account for 40 percent of the farm land compared with less than a fourth 25 years ago. Considering

that the 1945 Census reports 1.1 billion acres in farms, 40 percent of it—or close to 460,000,000 acres—is a good chunk of land to be in units of over 1,000 acres. Outside the 11 Western States there are 200,000,000 acres in these large units.

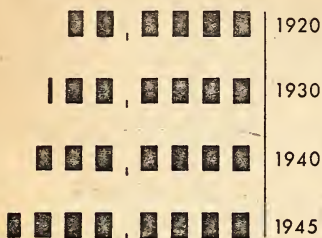
Rapid strides in mechanization and other technological advances within the past decade are part and parcel of the phenomenal increase in the large farms, those over 1,000 acres. In number they have increased 45,000 or two-thirds since 1920, 12,000 in the last five years. And, though these farms have increased in all regions of the country, the biggest jump has been in the West—90 percent in 25 years. Some of these farms, mostly ranches, are over 100,000 acres, of which there were 260 in 1945, about 100 more than in 1940. Nearly 10 percent of the farms in the West are now over 1,000 acres and account for 80 percent of the farm land in the region. However, the census includes public range lands in many of the farms because these lands are operated as units of the farms.

But in the Mid-west, where virtually no public lands have been available for a good many years, a fifth of the farm land is in farms of over 1,000 acres and many of them

AMERICAN FARMS ARE GETTING LARGER IN SIZE AND FEWER IN NUMBER

SIZE OF AVERAGE FARM

Each oblong represents
25 acres



NUMBER OF FARMS

Each circle represents
500,000 farms*



*CIRCLES REPRESENT FARMS OVER 10 ACRES
DATA FROM BUREAU OF THE CENSUS

U. S. DEPARTMENT OF AGRICULTURE

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are closer to 5,000 acres in size than 1,000. The number of these farms is now a third more than in 1920.

The South, too, has seen a substantial increase in these large farms—40 percent in the past quarter century—which now account for about 15 percent of the farm land in the region. In the East the number of farms over 1,000 acres has remained about constant, and though still a small proportion of all the farms in the region they account for three percent of the farm land.

In contrast to the increases in these very large farms is the decrease in farms from 10 to 500 acres in size. In 1920 these farms made up two-thirds of all farm land, today only half. Although they account for the bulk of all farms in the country, their number has been declining steadily for a good many years. Thus the present total of all farms of some 5,860,000 units in the country is 600,000 less than in 1920,

despite the 186,000,000-acre increase in land in farms.

The moderate-size farm ranging from about 100 to 260 acres, the group which includes the original 160-acre homestead unit, has long been the predominant family-size farm in many sections throughout the country. And though the number of these farms has been steadily declining as they have given way to larger commercial units, they still account for nearly a third of all farms and about a fourth of the farm land. In the Midwest two-fifths of the farms fall into this group, in the East a third, in the South a fifth, in the West a sixth.

But these moderate-size farms have felt the impact of mechanization and other economic pressures of the past quarter century probably more than any other group. While the larger farms have become mechanized at a rapid clip, these smaller units have had to do so as well in

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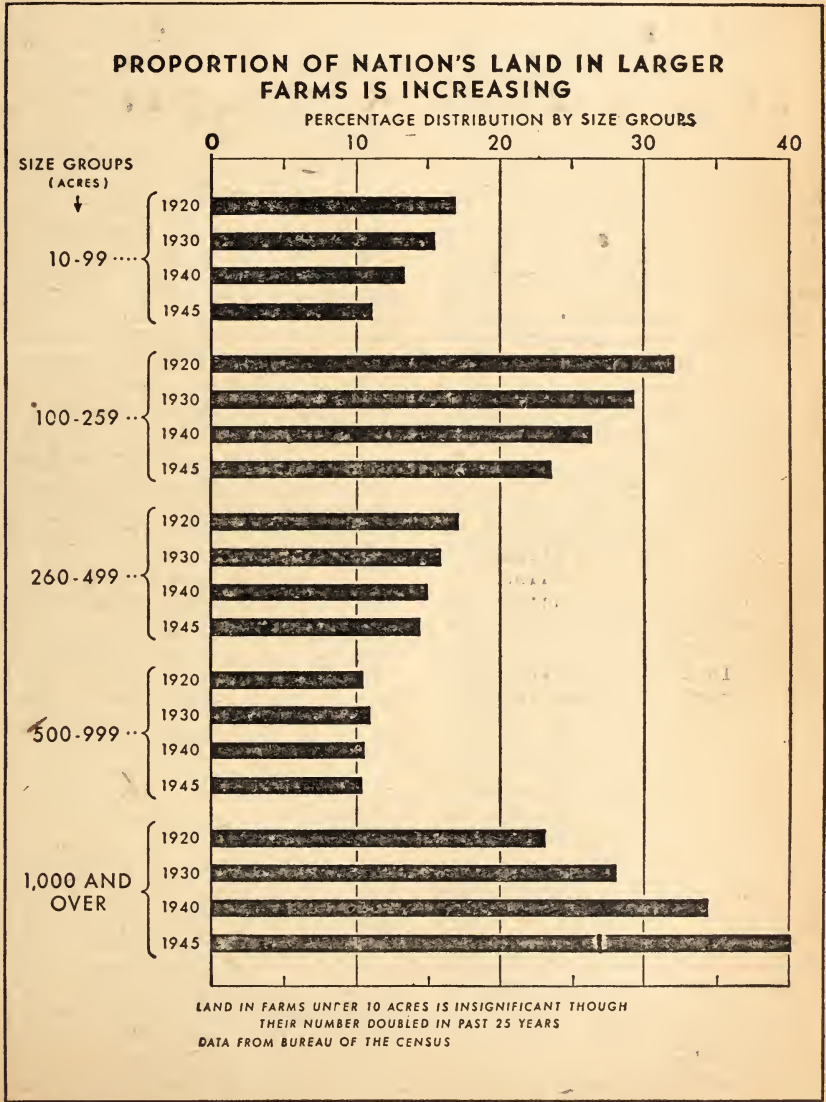
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order to successfully compete. In a great many cases this has necessitated the operation of larger acreages to pay for steadily increasing capital outlays for machinery. For example, the number of 100- to 180-acre farms decreased by over 110,000 during the war. For the most part, they were combined with others to make larger units. The number of these moderate-size farms has declined gradually but persistently in

all regions where homesteading was the primary means of settlement.

The small farm, falling largely in the 10- to 100-acre group and in many areas the weakest economically, still accounts for about half of all farms. The number of these farms has declined only a little in the 25 years, 54 percent of the total in 1920 and 48 percent now, while the land in these farms dropped from 17 to 11 percent of all farm



land. They still account for a large share of all farms in all regions—two-thirds in the South, a half in the East, two-fifths in the West, and a third in the Midwest. Most of them in the South are cropper and tenant units; in the West a lot of them are small irrigated farms and sub-marginal-sized units operated by Spanish-Americans. Many farms of this size, however, particularly near metropolitan centers, are successful truck farms or other specialty enterprises.

The census would show an even more pronounced trend toward larger farms if the very small units, those under 10 acres and for the most part not much more than rural residences for city workers, were not included in the total. The number of these so-called farms has increased over 300,000 since World War I, nearly 90,000 in the past five years. Although they account for 10 percent of all farms now compared to 5 percent a quarter cen-

tury ago, they still take up less than 1 percent of the land in farms.

The strong demand for virtually all farm products in the past half-dozen years, combined with rapid strides in mechanization and other technological advances, have further stimulated the operation of larger and larger farms—a process that was well started before the war. But very little new farm land has become available in recent years. Thus the large farms became large chiefly by absorbing other farm units, in part or in whole. This happened on a rather extensive scale during the war as many operators of small, uneconomic units were drafted into the armed forces or left to work in war industries. There has been some combining of two or more small units into larger, more economic farms; but not nearly to the extent that small units, or even fairly large units, have been absorbed into farms already large.

ELCO GREENSHIELDS,
Bureau of Agricultural Economics

Before Buying a Farm Check These Points

MANY veterans, young and full of ambition, are planning now to buy farms of their own. That is as it should be. Agriculture welcomes them.

For a goodly number, farming will prove a good life work. In the nature of things, however, some will come to grief, and through causes that can be avoided. As shown by their letters to the Department of Agriculture and the Land Grant Colleges, veterans recognize that some of the causes of future trouble can be dealt with in advance, through their own forethought. To this end, they are wanting the best advice possible.

Their own county agent is the best source of such advice, along with the State agricultural colleges. The local county agent has a wealth of knowledge about local situations.

Farming is a complicated business. A farmer must know how to handle the job of crop and livestock production, how to use and repair farm machinery and buildings; and what and

when and how much to buy and sell. In short, he must be able to successfully combine all of these skills and many more into a well managed farm.

The farm plant should be large enough to provide a decent living. An efficient farm unit is required to make proper use of modern machines and methods. The soil itself should be reasonably good, and the farm organized and located so that its products can be readily marketed. Electricity is important. Adequate schools and other community services should be convenient.

In buying a farm in the first place, it is absolutely essential to make sure that the probable future income from the farm warrants the price asked. Prices of many farms are now high. Find out whether the present favorable income of the farm under consideration is likely to continue, or be substantially less. A word of caution—a buyer of a high-priced farm may have to pay for it out of a low income in the future.

Successful farming is founded on a satisfactory home life. Full use of farm products in the home depends on the facilities in the home as well as the initiative of the farm wife. She must also be able to assume the responsibility for the many home and farm operations, such as collecting eggs or harvesting and preparing garden produce for the home and market. Electricity makes her home chores easier. Even the children can do many of the chores.

These are but a few things essential to an efficient farm unit and a successful farm business, and finally, a decent living.

If a farm is found that meets the necessary requirements, the next step is to arrange for its purchase, and the financing of the purchase. The following check list includes the major points in buying and financing, but they are by no means complete in detail. It is highly desirable to have the assistance of an informed person who can be relied on to help in closing the deal.

Contract of Sale: After tentatively agreeing with the seller to buy the farm, the first step is to have a written contract of sale setting forth all the terms and conditions of the transaction.

The contract should include a legal description of the land. But the legal description probably will not indicate anything more than the location of the land and the number of acres. One who buys farm land also buys buildings and permanent improvements to the land. Sometimes these items are not always clear, so it is wise to have borderline items specifically set forth in the contract to avoid future misunderstanding.

Additional items in the contract will include agreement on the purchase price, how and when payment is to be made, who is to pay accumulated taxes, insurance, water charges, etc., when the buyer will take possession and who will pay the costs of conveyance.

Probably most important, the contract of sale should stipulate that the buyer will not buy unless the seller proves a clear title.

Deed: A deed is the official writ-

ten instrument transferring title from seller (vendor or grantor) to buyer (vendee or grantee). There are many types of deed, such as sheriff's deed, quit claim deed, and warranty deed. The warranty deed in giving title to the buyer warrants that the seller will defend title against anyone who may claim interest in the property. Other deeds give to the buyer only such "rights and interests" as the seller may have in the property and usually are not as desirable as a warranty deed. A deed is usually drawn up by an attorney at the expense of the seller and should be recorded in the county title records.

Abstract of Title: This is essentially a history of the title, showing former transactions and owners, existence of liens and encumbrances, and any other matters bearing on the title to the property. The chief purpose of an abstract is to furnish an attorney or other trained person the means by which he can examine the title to make sure that it is not "clouded." This should always be done. A farmer would have considerable difficulty getting a loan on his property without clear title, and it is the abstract, not the deed, that furnishes the proof. Some States have "torrens land laws" which mean the State guarantee is behind a registered title.

An abstract costs money, the amount depending on how complicated previous transactions have been. Some abstracts may cost as much as \$100 or even more. The contract of sale should state whether the buyer or seller is to provide the abstract and stand the cost.

Promissory Note: Few buyers, especially veterans, are in a position to pay cash for an adequate size farm. Thus they borrow, which is good business when the expected income from the farm will be sufficient to pay the interest and principal on the loan without jeopardizing the standard of living from the farm. A borrower usually signs a note, an unconditional promise by the borrower to pay a certain amount of money to the lender at a stated future time. The note states the annual interest rate to be paid and

where the money is to be paid. The lender can enforce the terms of the note through the courts whether secured by a mortgage or not.

Mortgage: A mortgage, given as security on a note, means the borrower agrees to transfer the property to the lender if unable to meet the terms of the note. The actual security may be real estate, machinery, crops, livestock, or other property. If it is on real estate, it is known as a real estate mortgage, if on machinery, livestock, etc. it is called a chattel mortgage. A variation of these mortgages is the "deed of trust" under which title is vested in a third person who holds the property in trust for the lender.

Sales Contract: This is not to be confused with a "contract for sale" which sets forth the terms of the transaction and binds the parties only for such time as is necessary to make permanent arrangements. A sales contract, on the other hand, gives the buyer possession of the property and states the proportion of purchase price to be paid off before the seller gives a deed. It may be years before the buyer under such a contract will actually own the farm.

Payments: Because income from farming is notably irregular, the mortgage should have a provision allowing the borrower to make large payments when income is high, and smaller payments when income is low. If the borrower is not able to obtain this provision, he should himself set up a reserve to meet the payments in years of crop failure or low prices. A growing proportion of real estate mortgages are written so that each regular installment includes a payment on the principal as well as interest. These loans are called amortized loans.

Recording Papers: It is essential that important legal papers are recorded by the county official who keeps public records. This is especially true of the deed, mortgage, and the release of the mortgage which is given by the lender when the loan is paid in full.

The points outlined here are purposely brief, but many are frequently overlooked. No one should attempt

to buy a farm solely on the basis of this discussion. It is highly desirable to get in touch with a qualified person or agency for information and help about a particular area or farm. A few are the county agent, State agricultural college, or the United States Department of Agriculture.

HARALD C. LARSEN,
Bureau of Agricultural Economics.

More Comprehensive Farm Data

IN these days of rapid change, farmers need complete, reliable and up-to-date information on conditions of agriculture if they are to get the most out of their farming. To help meet this need the Bureau of Agricultural Economics conducted a survey in January 1947 interviewing some 16,000 farm operators throughout the country. Questions asked dealt with such subjects as crop and livestock inventories, employment and wages, income and expenses, and farm accidents. The January survey is part of a continuing program to give farmers a steady flow of more complete and more up-to-date information about farm people and farm business.

The facts collected from this survey will have many uses. For example, the information on farm accidents will provide a sounder basis for carrying out farm safety programs as well as for calculating farm accident insurance rates.

The 16,000 farms enumerated in the survey were a scientifically selected cross section of farms throughout the country, consisting of all the farms in certain small areas which, taken together, represent all types of farms and farming in the United States. Thus it will be possible to draw conclusions from this survey which can be applied to all farms in the country. Data relating to specific farms are, of course, confidential.

This survey method is a comparatively new development in the gathering of statistics on farming, at least on a nation-wide scale. But it will not replace present methods such as the mailing of the general

crop schedule to crop reporters each month. Rather, the enumerative surveys will supplement such methods by supplying information such as farm income and expenses which cannot readily or accurately be obtained by the use of mailed question-

naires. In time, it will be possible to have collected more complete, and thus more reliable, information than ever before to aid farmers in their businesses.

CHARLES F. SARLE
Bureau of Agricultural Economics

1947 Agricultural Goals, With Comparisons

Commodity	Prewar average 1937-41	War average 1942-46	1947 goal	1947 goal as percent of prewar	1947 goal as percent of war average
Planted acres unless indicated otherwise					
Grains:	(1,000)	(1,000)	(1,000)	(Percent)	(Percent)
Wheat.....	69,311	62,694	71,720	104	114
Rye ¹	3,700	2,520	2,374	64	94
Rice.....	1,118	1,511	1,520	136	101
Corn.....	91,977	94,325	*92,250	101	98
Oats.....	39,644	44,054	*44,670	113	101
Barley.....	14,291	14,774	*13,300	93	90
Sorghums, except for sirup.....	17,071	16,372	16,000	94	98
Vegetables:					
Potatoes.....	2,920	2,987	2,670	91	89
Sweet potatoes.....	741	765	*799	108	104
Truck crops—fresh ¹	1,751	1,823	1,985	113	109
Truck crops—processing.....	1,999	2,104	1,953	98	93
Dry beans.....	1,977	2,095	*2,200	111	105
Dry peas.....	280	624	478	171	77
Oil and fiber crops:					
Soybeans (for beans) ¹	4,121	10,291	*11,300	274	110
Flaxseed.....	2,307	4,158	*5,000	217	120
Peanuts (for harvest) ¹	1,818	3,309	*2,750	151	83
Cotton.....	26,358	20,333	*23,000	87	113
Sugar:					
Sugar beets.....	913	802	1,069	117	133
Sugarcane ¹ , except for sirup.....	291	302	327	112	108
Tobacco:					
Flue-cured ¹	925	983	1,141	123	116
Burley ¹	395	448	424	107	95
Other types ¹	294	237	288	98	122
All cultivated crops.....	284,202	237	288	98	122
Hay and seed crops: ¹					
Tame hay.....	57,194	287,515	297,518	105	103
Hay seeds ²	4,432	59,915	*60,660	106	101
Cover crop seeds.....	209	5,188	*6,639	150	128
Total all crops.....	341,605	347,822	358,352	105	106
Livestock numbers:					
Cattle, calves on farms (Dec. 31).....	69,220	80,635	78,500	113	97
Sheep, lambs on farms (Dec. 31).....	46,123	48,013	*35,200	76	73
Pig crop for year.....	77,179	96,677	*90,000	117	93
Milk cows, average per year.....	23,575	25,350	*24,300	103	96
Chickens raised on farms.....	656,464	795,383	*670,000	102	84
Turkeys raised.....	30,723	37,693	*40,760	133	108
Livestock products:					
Egg production (dozen).....	3,252,000	4,478,000	4,350,000	134	97
Milk production (pounds).....	107,903,000	119,530,000	*120,000,000	111	100

¹ Harvested.

² Part of hay acreage though listed separately—not included in total.

³ Fall pig goal of 32,000,000 head assumed.

*Preliminary.

NOTE.—Figures used for war average are not revised.

The agricultural goals, having been reviewed by State and local farm committees, point to the most effective use of the country's farm resources in 1947. Continued high output is asked of many commodities, while reduced production is asked of some in order to minimize future marketing difficulties and to not waste production resources.

Substantial increases over 1946 are asked in the production of flaxseed, soybeans, cotton, barley, and grain sorghums. In addition, emphasis is placed on the continued high production of wheat, rice, and sugar crops.

On the other hand, the goals ask for cuts in the acreages (and production) of some crops, particularly potatoes, peanuts, and burley and certain other types of tobacco.

Farm Wage Rates and Labor Efficiency

CASH wage payments and other items furnished to hired farm workers, now three times their prewar level, account for over 2 billion dollars annually out of total farm production expenses of more than 12 billion. While wage rates tripled, prices received by farmers doubled. And the best guess is that for some time wage rates may go even higher relative to prices received by farmers. What does this mean to farmers?

This situation means different things to different farmers. Half of the Nation's farms use no hired labor at all. Nearly a third of farm operators hire labor sparingly. The remaining one-fifth, however, employ over 90 percent of the hired labor. On the other hand, nearly a fourth of the hired farm workers are also farm operators or members of their families who do some work for wages on other farms.

As a major production expense, therefore, hired labor costs are of primary interest to the fifth of the farmers who do most of the hiring. For these farmers the distinction between wage rates per day, per month, etc., and the actual labor costs per unit of product is exceedingly important.

While wage rates have risen to over three times the prewar level, output per farm worker for the country as a whole has increased by 40 percent. Labor costs per unit of product have more than doubled since prewar days. At the same time, prices received by farmers have risen to double the prewar level.

In general, the increase in farm product prices has come close to matching the increase in labor costs per unit of product even though individual commodities have been affected differently. Prices paid by farmers for other production items have not risen as fast as wage rates. This fact, along with the marked increase in farm output during the war years, has meant that returns to operators and family workers have increased more rapidly than labor returns of hired workers. This is ex-

actly opposite to conditions in many depression years before the war, when hired farm workers were making more than was earned by operators and family workers. In the immediate future, farm wage rates may be expected to continue high relative to farm prices because farm wage rates traditionally have declined less rapidly than prices of farm products.

Industrial wage rates continue to surpass those paid on farm. Farm wage rates per day without board averaged between \$4.00 and \$4.50 in 1945, for a 9- to 10-hour day, whereas hourly earnings of factory workers were more than \$1.00. Even though there is a marked difference in living costs on the farm and in the city, high nonfarm wages will be attractive to many potential farm workers. The return of a million veterans to farms has improved considerably the average quality of the farm working force. But additional numbers of highly capable workers may be difficult to obtain in the immediate future, even with relative high farm wage rates.

For the farmers who use most of the hired workers, these probable conditions of moderate labor supplies, lowered prices of farm products and relatively high farm wage rates suggest a twofold objective in the immediate future: (1) Additional numbers of capable workers must be attracted to the farms, and (2) relatively high farm wage rates must be converted to lower labor costs per unit of product through more efficient use of labor. In addition to paying good wages, farm jobs must be made more appealing in order to attract workers. Better housing and living conditions on the farm, provision of more farm products and better labor relations to workers are important means to this end. Further advances will come along the lines made during wartime conditions of restricted labor supplies.

Continued progress in labor productivity will contribute to lowered labor costs per unit of product. Higher crop yields, greater use of

machinery and other labor-saving devices, and farm work simplification all result in greater product per hour of work. Although additional or better machinery will add to investment requirements, the resulting savings in labor costs often reduce total operating costs. Most capital investments that result in more effective labor use on the farm should pay off, but the savings must be balanced against the extra costs. The fifth of the farmers depending most on hired labor are generally in the best position to make changes of this kind.

The 3 farmers in 10 who use hired help only sparingly also stand to gain by increased labor productivity on their farms. Greater output per worker can reduce their cash wage costs per unit of product. And the

operator and family labor time saved can be used to increase the output of the farm, or additional work can be done off the farm. Those on the productive family-operated farms also stand to gain in better living and in various other ways by the adoption of more efficient methods of production.

High farm wage rates and farm prosperity generally go together; conversely, dollar-a-day wages and 30-cent corn historically have gone together. A high level of business activity and industrial employment mean reduced supplies of farm labor and relatively high farm wage rates. But a large national income means a good market for farm products and high farm income.

GLEN T. BARTON,
Bureau of Agricultural Economics.

What's Ahead in Short-term Credit?

THE year 1947 will probably see a net increase in debts of farmers, the first time in several years. Increasing supplies of labor and goods, as well as the prospects of continuing good farm income, will encourage some further expansion of farm operations and will stimulate purchases of many goods for the farm and home. In financing these expenditures farmers will probably use short-term credit rather extensively.

During the war, the amount of farmers' short-term debt stayed fairly steady. Although higher production costs increased the size of the average loan, improved farm incomes reduced the number of borrowers. The amount of farmers' short-term debts to banks, FCA and FSA held close to 1.8 billion dollars in 1943, 1944, and 1945. And farmers' use of credit from dealers, merchants, and finance companies for purchasing automobiles, farm machinery, household equipment, and similar goods declined sharply from 1941 till after the war.

But the end of hostilities brought a sharp rise in short-term farm debts. For the first time in over a decade, short-term farm loans, used chiefly for farm-operating purposes, have passed the 2-billion-dollar

mark. Such loans by banks, FCA, and FSA increased from 1 827 million dollars in July 1945 to 2,090 million in July 1946. Total consumer credit used by both farm and non-farm groups also has increased substantially, from 5.7 billion dollars in August 1945 to 8.1 billion in August 1946. This 44-percent rise in total consumer credit indicates the expansion in the use of such credit by farm people.

Favorable farming conditions generally in 1946, together with good prospects in the year ahead, will encourage further expansion of farm production in 1947. The number of persons on farms is increasing. More and more workers are becoming available for farm work. Many returning veterans and war workers have bought or rented farms. On many farms sons are returning from the armed forces to the farms they left. These population changes may lead to more acres of crops, increased number of livestock, or other shifts in farm operations.

This general expansion will often involve purchases of farm machinery, enlargement or improvement of farm buildings, and the use of more feed, fertilizer and supplies. In addition, many farmers not planning

to expand their operations will buy machinery and improve their buildings to replace old equipment or ease the drudgery of farm work, now that wartime shortages are gradually disappearing.

Farm people want and need automobiles, refrigerators, washing machines, radios, and many other things that contribute to the comfort and enjoyment of living. And as the supply of these goods increases farmers will buy many of them. But because the prices of many of these goods have gone up, a large number of farmers will have difficulty in paying for them.

On the whole, the financial condition of agriculture is very good. And though farmer holdings of cash, bank deposits, and bonds are at record levels, these savings are concentrated in relatively few hands, with many farmers having only small amounts. This means that a great many farmers will require credit for expansion, improvements, and new purchases. Not only can an increase in short-term loans from the regular financing institutions be expected, but also a substantial rise in credit from dealers, merchants, finance companies, and individuals. Such an expansion of credit can make possible a high-level, efficient production necessary to a prosperous agriculture. Also it can be helpful

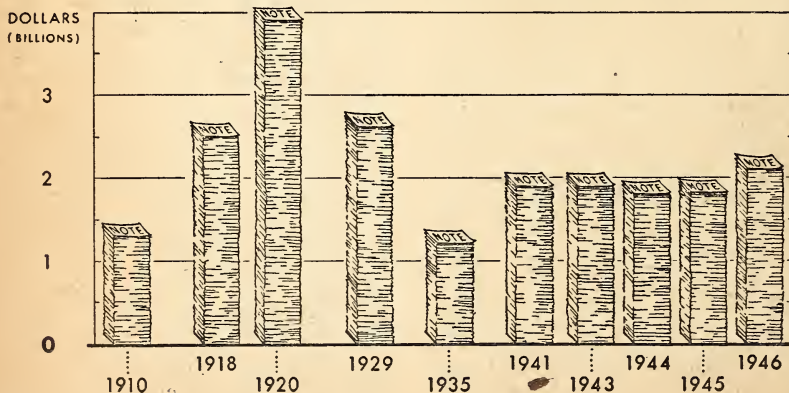
in providing comforts and conveniences needed on farms.

But too much expansion can be the direct cause of future financial difficulty. The ease with which debts can be carried during this period of large incomes may encourage some farmers to obligate themselves more heavily than is safe for the long pull. After World War I many farmers were caught with burdensome short-term debts when farm prices dropped. All too often some people do not look far enough ahead when incurring debts. Young farmers, especially those whose farming experience has been obtained in the last several years of larger incomes and increased prices for land, may have an unrealistic sense of values that can lead only to a painful process of debt readjustment.

The outlook for income on the farm, as well as the cost outlook, is of first importance in determining its probable long time debt-carrying capacity. As a conservative guide for those using short-term credit to begin farming or expand operations or make extensive purchases, it would be well to examine past trends of both prices received and prices paid by farmers as shown by the indexes on page 9. Although the indexes for prices received in some of the periods shown were abnormally low, it is important to realize

A QUARTER CENTURY OF SHORT-TERM FARM CREDIT

NON-REAL ESTATE FARM LOANS OUTSTANDING HELD BY BANKS AND
FEDERAL AGENCIES (EXCLUDING CCC), JULY 1, 1910 TO 1946



the fluctuating nature of farm prices even during one season, and the vulnerability of the current high level. An examination of prices paid by farmers will indicate that in depressed periods, costs have not declined to the same levels as farm incomes. The current relationship, which is exceptionally favorable, cannot be expected to continue indefinitely. To realize fully that credit incurred may have to be repaid at a time when income may be lower than at present is a requirement of cautious management.

An increase in short-term debt will probably go along with increasing farmer expenditures. In view of the outlook for eventually lower values and prices, all expenditures at this time should be made with caution. Some purchases or improvements in connection with the farm business can be postponed until the advent of lower costs without any great sacrifice in farm production, or efficiency. Purchases of equipment or improvements of buildings which require use of credit

usually should be made only when they will increase income, or decrease production costs, or make farm work easier. Investments in land, livestock, and other things that may depreciate in value in the next several years, may be justified only when income prospects appear especially good. Heavy expenditures, if financed by credit at this time, may result in fixed debt charges difficult to meet if incomes fall off.

Some think the use of credit to purchase consumption goods is uneconomic. Though the practice is dangerous for many people, credit is an acceptable means of maintaining or raising the level of living when income is temporarily inadequate. But it is important to understand that credit is not a substitute for income. Accordingly, regardless of the desirability of having many of the modern comforts and conveniences, financing them by credit in excess of the income capacity of the farm should not be attempted.

LAWRENCE A. JONES,
Bureau of Agricultural Economics.

Dried Milk Output Tripled in Decade

PRODUCTION of dry milk, whole and skim, reached a record high in 1945 at more than three times the 1935-39 output, and in 1946 it was nearly as much as in 1945.

Food uses of dry milk were gradually increasing in the years immediately prior to World War II. Then wartime demands greatly stimulated output. Noncivilian requirements during the war were for foods high in nutritive value, low in costs and small in space requirements. Dry milk, particularly nonfat milk solids (dry skim milk), met this prescription perhaps better than any other livestock product.

Dry whole milk production increased by a greater degree than dry skim milk, and this increase represents one of the most outstanding gains percentagewise in the Nation's production of any food item during the war. Output in 1945, the peak year, totaled 219 million pounds compared with the prewar average of 19 million pounds. Production in

1946 was only moderately smaller than in 1945.

Unlike dry whole milk of which practically all of the production is used for human food, a substantial part of the domestic production of dry skim milk before the war was used for animal feed. The greater production and use of dry nonfat solids for human food during the war was partly at the expense of dry milk for animal feed, but to a large extent it was made from milk that, according to previous practices, would have been fed to livestock or wasted. Production of all dry skim milk in 1946 totaled 635,000,000 pounds compared with 243,000,000 pounds prior to the war (1935-39). Production of dry skim milk for animal feed on the other hand, totaled only 15,000,000 pounds in 1946, a record low, compared with the 1935-39 average of 133,000,000 pounds.

A substantial decline in military and export needs for dry milk is in prospect for 1947. Exports, how-

1946 Crop Output in Brief

AGGREGATE crop production in 1946 was an all-time record, exceeding the previous peak in 1942 by 2 percent.

New Records: Corn, wheat, potatoes, rice, soybeans, tobacco, peaches, pears, plums, cherries, truck crops.

Near Records: Oats, peanuts, grapes.

Above Average: Hay, sorghum grain, sugar beets, sugarcane, dry peas, sweetpotatoes, apples, prunes, apricots, hops, popcorn.

Below Average: Cotton (and cottonseed), rye, barley, flaxseed, buckwheat, dry beans, pecans, broomcorn, maple products.

ever, will continue to be several times the prewar volume, and a large part of this gain may well prove permanent. Domestic demands, temporarily restricted to make sufficient quantities available for war uses, will absorb much greater quantities than in previous years. However, just to utilize present drying capacity it will be necessary to expand domestic uses considerably over past levels. Continued increases in consumption of nonfat solids in dry as well as other forms will provide farmers with a more profitable outlet for their skimmed milk and will help improve the average national diet.

Various attempts were made to produce dry milk beginning in the middle of the 19th century but it was not until 1898 that dry skimmed milk was made without the mixture of other ingredients. With strong demands for nutritious, nonperishable foods, milk drying was stimulated somewhat during World War I but the sharp expansion did not begin until the middle 1920's. From 1916, the first year for which any production figures are available, to the outbreak of World War II, the output of dry nonfat solids increased every year except 1921. Much of the output in the early years was for

animal feed but a substantial shift to food uses was under way even before the urgent wartime requirements reduced the output for feed to a mere shadow of the previous output for that purpose.

At the outbreak of World War II there were 258 skim-milk drying plants in production. Then to meet anticipated requirements for more nonfat milk solids, the Government authorized and, through assistance in obtaining materials and in financing, encouraged a substantial expansion in milk drying facilities. By the end of 1944, 529 plants were in production, more than twice the prewar number. A further substantial expansion has taken place since 1944 and even now additional units are going up. In addition, many plants that dried eggs exclusively during the war could be adapted for drying milk.

To assure ample supplies of skimmed milk for plants constructed during the war, it was necessary to go beyond the fringes of fluid milk market areas, where many of the previous drying facilities were located. It was necessary to go deep into the butter producing territories where farm sales of dairy products at that time consisted almost solely of farm-separated cream, with most of the skimmed milk fed to hogs. Minnesota saw the greatest increase in number of plants—at least 60 were added from 1939 to 1944. In the same period, Wisconsin added 48 plants, making a total of 112, compared with 84 for Minnesota and 529 for the entire Nation. In Iowa, a state usually second only to Minnesota in butter production, there were no milk drying plants before the war but by 1944 ten were in operation. Other States important in production of dry nonfat solids, with a number of plants in 1944, are as follows: New York 53; Michigan 42; California 28; Ohio 26, Pennsylvania 23; and Indiana 13. In 1944, Wisconsin and Minnesota accounted for half of the total nonfat dry milk produced in the United States.

Production of dry whole milk is concentrated in fewer States than is the output of dry skim milk. The three leading states in 1944 were

Wisconsin with 58 million pounds, New York with 48 million pounds, Minnesota with 14 million pounds and Ohio with 13 million pounds. The total output for the country that year was 178 million pounds. A total of 97 plants reported production of dry whole milk in 1944.

The greater number of drying plants now, distributed as they are, means for thousands of dairy farmers, a potentially better outlet for skim milk as well as for butterfat. Nonfat milk powder produced in 1945 required the yearly production of 1.2 million cows, producing at the average rate for cows in Wisconsin and Minnesota. Prior to the war, skim milk from only about a half million cows ended up in nonfat powder for human consumption. The output of whole milk powder in 1945, probably required the output of around 300,000 head of cows compared with perhaps around 30,000 head in 1939.

The greater production of dry milk has contributed to the sharp increase in utilization of the Nation's output of nonfat milk solids. Prior to the war only about 55 percent of the total flow of nonfat solids was used for human food. The remainder was fed to animals, used for industrial purposes or wasted. The proportion utilized for food increased sharply during the war and by 1945 was equivalent to more than two-thirds of total production. Per capita consumption of nonfat solids, increased nearly $\frac{1}{3}$ over prewar whereas, consumption of fat solids (butterfat) has been practically constant. Increased production of nonfat solids accounted for about 15 percent of the total increase in use of nonfat solids utilized for food, from the prewar (1935-39) average to 1945. Other items important in bringing about the increase are fluid milk, chocolate and buttermilk.

Prices of Farm Products

[Estimates of average prices received by farmers at local farm markets based on reports to the Bureau of Agricultural Economics. Average of reports covering the United States weighted according to relative importance of district and State]

Commodity	5-year average		Dec. 15, 1945	Nov. 15, 1946	Dec. 15, 1946	Parity price Dec. 15, 1946
	August 1909-July 1914	January 1935- December 1939				
Wheat (bushel).....dollars..	0.884	0.837 ¹	1.54	1.89	1.92	1.88
Rye (bushel).....do.....	.720	.554	1.43	2.07	2.18	1.53
Rice (bushel).....do.....	.813	.742	1.80	2.14	2.15	1.73
Corn (bushel).....do.....	.642	.691	1.09	1.27	1.22	1.37
Oats (bushel).....do.....	.399	.340	.703	.782	.808	.850
Barley (bushel).....do.....	.619	.533	1.03	1.32	1.36	1.32
Sorghum, grain (100-pound).....do.....	1.21	1.17	2.11	2.27	1.97	2.58
Hay (ton).....do.....	11.87	8.87	15.40	17.20	17.70	25.30
Cotton (pound).....do.....	12.4	10.34	122.80	29.23	29.98	26.41
Soybeans (bushel).....dollars..	1.96	.954	2.09	3.09	2.75	² 2.04
Peas (pound).....cents.....	4.8	3.55	18.33	9.53	8.89	10.20
Flaxseed (bushel).....dollars..	1.69	1.69	2.89	6.90	6.94	3.60
Potatoes (bushel).....do.....	.697	.717	1.37	1.23	1.25	1.58
Sweetpotatoes (bushel).....do.....	.877	.807	1.94	2.00	2.10	1.87
Apples (bushel).....do.....	.96	.90	3.34	2.35	2.51	² 2.04
Oranges on tree (box).....do.....	41.81	1.11	2.71	1.49	1.57	³ 2.55
Hogs (hundredweight).....do.....	7.27	8.38	14.20	22.80	22.70	15.50
Beef cattle (hundredweight).....do.....	5.42	6.56	11.50	17.60	17.40	11.50
Veal calves (hundredweight).....do.....	6.57	7.80	12.60	17.30	17.40	14.40
Lam b: (i hundredweight).....do.....	5.88	7.79	12.80	18.40	18.60	12.50
Butterfat (pound) ⁴cents.....	26.3	29.1	50.7	84.4	87.0	⁶ 61.3
Milk, wholesale (100-pound) ⁵dollars..	1.60	1.81	3.42	5.13	5.15	⁶ 3.73
Chickens (pound).....cents.....	11.4	14.9	23.8	27.5	27.4	24.3
Eggs (dozen).....do.....	21.5	21.7	48.2	47.8	47.0	⁶ 55.4
Wool (pound).....do.....	18.3	23.8	40.6	40.9	41.1	39.0

¹ Revised.

² Comparable base price, August 1909-July 1914.

³ Comparable price computed under section 3 (b) Price Control Act.

⁴ Comparable base price, August 1919-July 1929.

⁵ Does not include dairy production payments made directly to farmers by county PMA offices October 1943 to June 1946.

⁶ Adjusted for seasonality.

⁷ Preliminary.

Economic Trends Affecting Agriculture

Year and month	Industrial production (1935-39 = 100) ¹	Income of industrial workers (1935-39 = 100) ²	1910-14=100				Index of prices received by farmers (August 1909-July 1914=100)			
			Wholesale prices of all commodities ³	Prices paid by farmers		Farm wage rates ⁴	Livestock and products			
				Commodities	Commodities, interest, and taxes		Dairy products	Poultry and eggs	Meat animals	All livestock
1910-14 average	58	50	100	100	100	100	100	101	101	101
1915-19 average	72	90	158	151	150	148	148	154	163	158
1920-24 average	75	122	160	161	173	178	159	163	123	142
1925-29 average	98	129	143	155	168	179	160	155	148	154
1930-34 average	74	78	107	122	135	115	105	94	85	93
1935-39 average	100	100	118	125	128	118	119	109	119	117
1940-44 average	192	224	159	150	148	212	162	146	171	164
1945 average	203	286	154	180	174	350	197	196	210	203
1945										
December	163	233	156	183	176		204	222	204	207
1946										
January	160	235	156	184	177	361	203	197	206	204
February	163	218	157	185	178		202	168	214	202
March	168	238	159	187	180		201	167	219	213
April	165	247	161	188	181	362	199	166	225	205
May	159	248	162	192	185		198	173	226	207
June	171	264	165	196	188		207	178	230	213
July	172	268	182	209	199	378	245	196	268	247
August	177	284	188	214	204		257	199	294	263
September	180	287	181	210	200		271	221	249	250
October	181	287	196	218	207	378	300	257	318	299
November	181		204	224	212		307	230	313	294
December				225	218		312	226	331	294

Year and month	Index of prices received by farmers (August 1909-July 1914=100)								Parity ratio ⁵	
	Crops							All crops and live-stock		
	Food grains	Feed grains and hay	To-bacco	Cotton	Oil-bearing crops	Fruit	Truck crops			All crops
1910-14 average	100	101	102	96	98	99	-----	99	100	100
1915-19 average	193	164	187	168	187	125		168	162	106
1920-24 average	147	126	192	189	149	148	7 143	160	151	86
1925-29 average	140	119	172	145	129	141	140	143	149	89
1930-34 average	70	76	119	74	72	94	106	86	90	66
1935-39 average	94	95	175	83	106	83	102	97	107	84
1940-44 average	123	119	245	131	159	133	172	143	154	103
1945 average	172	161	366	171	215	220	224	201	202	116
1945										
December	178	162	378	184	213	230	223	206	207	118
1946										
January	179	164	375	180	213	225	249	207	206	118
February	180	166	368	186	212	233	275	213	207	116
March	185	171	367	183	208	229	283	215	209	116
April	185	171	368	190	210	244	282	220	212	117
May	198	188	369	194	214	248	177	215	211	114
June	200	195	370	210	219	261	185	223	218	116
July	215	244	369	249	242	249	163	240	244	123
August	203	225	388	271	242	203	162	233	249	122
September	207	221	396	285	236	210	154	226	243	122
October	218	222	410	304	255	208	151	244	273	132
November	220	187	399	236	342	186	207	230	263	124
December	224	186	406	242	334	211	166	232	264	124

¹ Federal Reserve Board; represents output of mining and manufacturing; monthly data adjusted for seasonal variation.

² Computed from data furnished by Bureau of Labor Statistics and Interstate Commerce Commission on pay rolls in mining, manufacturing, and transportation; monthly data adjusted for seasonal variation. Revised May 1946.

³ Bureau of Labor Statistics.

⁴ Monthly data adjusted for seasonal variation.

⁵ Revised.

⁶ Ratio of prices received to prices paid for commodities, interest, and taxes.

⁷ 1924 only.

drinks (made from skim milk) and skim milk cheeses.

Nonfat milk solids contain all the food values of whole milk except butterfat. Milk and its products other than butter, now furnish about three-fourths of the total dietary calcium, 15 percent of the protein and 30 percent of the riboflavin.

To date the baking industry has been one of the most important users of dry skim milk, used for enrichment purposes and for quality improvement. Fairly large amounts have been used in the preparation of foods in institutions such as hotels and restaurants but very limited quantities are used in home cooking or in preparing school lunches. Today about 40 percent of the school lunches in 12 Southern States are not serving milk because supplies are not available. Diets in these sections are seriously deficient, particularly in calcium and riboflavin.

As Americans come to better understand the nutritional value and uses of nonfat milk solids the demand for the product will tend to increase. And this will mean additional income for dairy farmers. Instead of separating cream on farms, selling it and feeding the skim milk to livestock, farmers would have a permanent market for more of their milk in whole form.

A sharp shift in this direction has occurred since 1939. Last year about three-fourths of the milk and cream sold was in form of whole milk, compared with only about one-half in 1939. Of course, that was under wartime conditions when domestic consumption of fluid milk was high and much of the dried skim milk output, along with whole milk products, was used by the military, lend-lease, or for relief feeding. Whether a wide market for nonfat portions of milk will continue to be enjoyed by farmers depends to a large extent on how well the dairy and food industries sell consumers on the food uses and handiness of dried milk.

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Winter Wheat and Rye

EXCEPTIONALLY favorable seeding and growing weather last fall made it possible for farmers to plant a very large acreage in winter wheat, and, on the basis of December condition, it looks like they will produce a new-record winter crop of about 947 million bushels. Even with only an average spring wheat crop of around 225 million bushels, farmers could come up with a new-record total crop in 1947 of about 1,170 million bushels, well above the 1946 record of 1,156 million bushels.

Farmers planted 3.6 million acres in rye last fall, 5 percent more than a year earlier. But the acreage is only a little more than half that for the 1935-44 average, and the production from the relatively small acreage probably will not meet all needs in the year ahead.

Cotton

COTTON consumption in December continued exceptionally high. Increased consumption since mid-summer, partly seasonal, is also the result of the easing and later removal of price controls. Consumption in the present marketing year may total considerably more than last season's 9.2 million bales, even though less than the present rate would indicate.

On this basis (assuming exports of 3 million bales, imports of 200,000 bales and 1946 production of 8.48 million bales) the carry-over of all cotton in the United States next August 1 would be about 3¼ million bales compared with the carry-over last August 1 of 7½ million and the 1935-39 average of 8.3 million. The prospective 1947 carry-over would be the smallest since 1929.

This outlook for the carry-over was paramount in determining the 1947 goal of 23 million acres. An acreage of this size (assuming reasonably favorable yields) will be required next season in order to permit domestic consumption and exports to equal those of this season. Preparations for the new crop are already under way, with plantings expected to begin in February for the southern edge of the Cotton Belt.

Following the October break in prices, farmers began placing sizeable quantities of cotton under Government loans compared with only a few hundred bales per week at the early part of the season.

Pig Crop

FARMERS plan to farrow 8.6 million sows this spring, 6 percent more than last spring, according to their December intentions. If an average number of pigs are saved per litter, the 1947 spring pig crop would thus total about 53 million head, about a half million more than last spring and well above the 1935-44 average. Favoring such an increase is the near-record high hog-corn price ratio, prevailing since late October, which is expected to continue for at least the next few months.

Total hog slaughter during the 1946-47 hog marketing season (beginning last October) is expected to be slightly smaller than in 1945-46. Most of the reduction will occur during the second and third quarters of 1947, when hogs from the fall pig crop (which was 11 percent less than a year earlier) are marketed.

But hog slaughter will increase more than seasonally next fall of 1947 when spring pigs are marketed in volume. Slaughter during the late fall and winter of 1947-48 will exceed that of a year earlier.

Poultry and Eggs

TURKEY growers in 1947 will probably increase production over last year. However, the prices they receive later in the year will be below the record highs of 1946.

Chicken prices during the next few months will probably increase from late December levels. Commercial broiler output is expanding but farm chicken slaughter, decreasing seasonally, is below last year. Total supplies of chicken during the first half of 1947 are expected to be about as large as in the first half of 1946.

Egg producers are beginning 1947 with about 10 percent fewer layers than in 1946. But prospective increases in the rate of lay and larger cold-storage stocks will in part offset the decrease in numbers. Thus egg supplies in the first half of the year will be only about 5 percent smaller than a year earlier.

Prices received by farmers are likely to average higher than in 1946. If farmers' costs do not fall off, the legal support prices for eggs will be moderately higher in the first half of 1947 than were actual prices received in the first half of 1946. Under the Steagall Amendment, the support price will be 90 percent of parity.

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